

REMARKS

Claims 1-12 are pending in the present application. Claims 1 and 4 have been amended and claims 13-16 have been cancelled. Claims 1 and 4 are independent. Reconsideration in view of the following arguments is kindly requested.

Drawings

The Examiner has objected to Fig. 1 for containing reference numeral “7” inconsistent with reference numeral “61” as described in paragraph [0029]. Applicant has replaced “7” with “61” in an amendment to the specification to clarify this minor informality. Thus, no new drawing Figures are needed.

Applicant submits that this amendment to the specification is for clarification purposes only. Accordingly, Applicant submits that the objection has been overcome. Withdrawal of this objection is kindly requested.

Claim Rejections – 35 U.S.C. § 103

Claims 1-2 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Op De Beek et al. (USP 4,628,530) in view of Azima et al. (USP 6,522,760) and further in view of Meyer et al. (USP 5,377,274). This rejection is respectfully traversed.

Applicant submits that Op De Beek, Azima and Meyer, taken either singly or in combination (even assuming *arguendo* that they could be combined) fail to teach or disclose all of the features recited in claim 1. In particular, none of the references disclose measuring the acoustic frequency response of a flat surface loudspeaker, determining a frequency curve based on the measured acoustic frequency response, determining an inverse frequency curve to the frequency curve, and simulating the inverse frequency curve in a filter device as a transfer function of the filter device, and compensating for the frequency response of the flat surface loudspeaker by the filter device...based upon the transfer function, as recited in claim 1.

Applicant agrees with the Examiner that Op De Beek fails to teach a flat loudspeaker and a frequency analyzer measuring the frequency response of the loudspeaker, however, Applicant disagrees with the Examiner that Azima and Meyer disclose the deficiencies lacking in Op De Beek with regard to claim 1.

Op De Beek discloses an automatic equalizing system that includes an equalizing unit 4 for correcting the frequency characteristic of an electrical signal applied to a first input 7 of the equalizing unit 4. Further, the equalizing system includes analyzing unit 16, which applies a Fourier transform calculation to previously digitized input signals $x(t)$ and $y(t)$. The Fourier transform computation provides Fourier-transformed signals $F_x(f)$ and $F_y(f)$, which enables a transfer function between these two signals to also be calculated. The teachings of Op De Beek are limited to correcting the frequency characteristics of an electric input signal. Nowhere does Op De Beek teach or disclose determining an inverse frequency curve to a frequency curve, and determining the acoustic frequency response of a loudspeaker, as recited in claim 1.

The Examiner relies on the disclosure of Meyer as teaching the shortcomings of Op De Beek. The Examiner argues:

“Modifying Op De Beek’s apparatus by incorporating Meyer’s analyzer also observes the amplitude versus frequency response of the transducer would read on “measuring the acoustic frequency of this flat surface loudspeaker”, “determining a frequency curve”, “determining an inverse frequency curve to the frequency curve” ”.

Applicant disagrees with the Examiner’s reasoning, and submits that Meyer does not make up for these deficiencies of Op de Beek. Meyer discloses a correction circuit for improving transient behavior of a conventional two-way loudspeaker system (see speakers 11 and 13 of the two-way speaker configuration of Fig. 3). Meyer further discloses amplitude and phase correction circuitry for correcting amplitude and phase responses of frequency drivers, and a phase offset technique for introducing frequency dependent phase shift in the loudspeaker system. Nowhere does Meyer teach

or disclose at least determining an inverse frequency curve to a frequency curve, and determining the acoustic frequency response of a loudspeaker, as recited in claim 1. The teachings of Meyer are limited to improving transient behavior of the input signals of a two-way loudspeaker system.

The Examiner also relies on Azima as teaching the shortcomings of Op De Beek. Applicant disagrees and submits that the teachings of Azima are limited to methods of selecting a transducer location for an acoustic radiator (see Fig. 4 of Azima). Azima discloses measuring the acoustic output of panel members 11 to determine transducer locations for increased performance. The teachings of Azima are limited to selecting transducer locations based on marginal clamping and damping for improved performance of a speaker. The performance changes to a speaker described in Azima are based on the surface tension (i.e., stiffness) of the speaker surface. None of the teachings of Azima would require signal processing for determining an inverse frequency curve to a frequency curve, and determining the acoustic frequency response of a loudspeaker, as recited in claim 1.

Accordingly, Applicant submits that claim 1 and those claims dependent thereon are allowable over the prior art. Withdrawal of this rejection is kindly requested.

Applicant further submits that there is no evidence of motivation, suggestion or desirability to combine Op De Beek with Azima and Meyer to reject claim 1. Applicant respectfully reminds the Examiner that in order to establish a *prima facie* case of obviousness, there must be some evidence of motivation, suggestion or desirability to combine two or more references.

The Examiner alleges:

“It would have been obvious to one of ordinary skill in the art to modify Op De Beek’s apparatus by incorporating Meyer’s spectrum analyzer and Azima’s concept of a flat loudspeaker for the benefit of producing acoustically acceptable effective distribution”.

Applicant disagrees and submits that nowhere in the disclosure of Azima is there any evidence of motivation, suggestion or a desirability to combine the acoustic measurement device of Azima with

the automatic equalizing system of Op De Beek or the correction circuit of Meyer. Further, after a cursory review of Op De Beek and Meyer, Applicant submits that neither reference discloses any evidence of a motivation to combine their disclosures with a method of transducer measurement as disclosed in Azima. Accordingly, Applicant submits that claim 1 and those claims dependent thereon are allowable over the prior art. Withdrawal of this rejection is kindly requested.

Relying on common knowledge or common sense of a person of ordinary skill in the art without any specific hint or suggestion of this in a particular reference is not a proper standard for reaching the conclusion of obviousness. See *In re Sang Lee*, 61 USPQ 2d 1430 (Fed. Cir. 2002). Further, relying on obvious design choice as a reason for combining teachings of the various references is again not the proper standard for obviousness. If the Examiner is relying on personal knowledge to support a finding of what is known in the art, the Examiner must provide an Affidavit or Declaration setting forth specific factual statements and explanation to support the finding. See 37 CFR 1.104(d)(2) and MPEP 2144.03(c). Accordingly, Applicant respectfully challenges the Examiner's alleged motivation and respectfully require the Examiner to withdraw the rejection or provide an Affidavit or Declaration as set forth above if the rejection is to be maintained.

Thus, withdrawal of the outstanding rejection is respectfully requested.

Claims 4, 5, 6 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yashima et al. in view of Azima. This rejection is respectfully traversed.

Regarding claim 4, Applicant submits that Yashima fails to teach or disclose a filter device for sound signals, wherein a transfer function of the filter device is the inverse of a frequency response of the flat surface loudspeaker, as recited in claim 4.

Yashima discloses a method of determining a transfer function for a loudspeaker (i.e., horn). A non-recursive digital filter 2 provides an inverse characteristic of the transfer characteristic for the ducted horn 200, however, the inverse characteristic of the horn disclosed in Yashima does not meet

the limitations of claim 4. In particular, claim 4 recites a transfer function of the filter device is the inverse of a frequency response of the flat surface loudspeaker, which is not taught or suggested by Yashima.

Further, for at least the reasons as stated above with regard to claim 1, Applicant submits that Azima provides no additional support for the features recited in claim 4. Additionally, there is no evidence of motivation or suggestion to combine the teachings of Azima with Yashima. Therefore, it would not have been obvious to combine Yashima and Azima to reject claim 4.

Accordingly, Applicant submits that claim 4 and those claims dependent thereon are allowable over the prior art. Withdrawal of this rejection is kindly requested.

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Op De Beek et al. in view of Azima et al., in view of Meyer et al. (USP 5,377,274) and further in view of Yashima et al. (GB 2 289 185); Claims 7 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yashima et al. in view of Azima et al., and further in view of Smith (GB 2 265 519); claims 8-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yashima et al. in view of Azima et al., and further in view of Tanaka (USP 5,081,604); claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Op De Beek et al. in view of Azima et al. in view of Meyer et al., and further in view of Tagami (USP 6,259,800); and claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yashima et al. in view of Azima et al. and further in view of Tagami. These rejections are respectfully traversed.

Applicant submits for similar reasons as stated above with regard to independent claims 1 and 4, that claims 3 and 7-12 are also allowable over the prior art. After a cursory review of the additional references cited by the Examiner, Applicant submits that none of teachings disclosed in these additional references make up for the previously mentioned deficiencies of independent claims

1 and 4, and thus do not render claims 3 and 7-12, obvious. Withdrawal of these rejections is respectfully requested.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-12 in connection with the present application is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) hereby petition for a one (1) month extension of time for filing a reply to the outstanding Office Action and submit the required \$110.00 extension fee herewith.

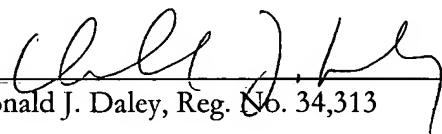
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By


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